UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/004,001	11/01/2001	Wen Zhao	555255012288	7436

7590   05/14/2004

Joseph M. Sauer, Esq.
Jones, Day, Reavis & Pogue
North Point
901 Lakeside Avenue
Cleveland, OH 44114

EXAMINER
PHAM, TUAN

ART UNIT	PAPER NUMBER
2643	4

DATE MAILED: 05/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	10/004,001	ZHAO ET AL.
	Examiner	**Art Unit**
	TUAN A PHAM	2643

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 November 2001*.

2a)☐ This action is **FINAL**.　　2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-41* is/are pending in the application.

　　4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-41* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

　　Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

　　Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

　　a)☐ All　b)☐ Some *　c)☐ None of:

　　　1.☐ Certified copies of the priority documents have been received.

　　　2.☐ Certified copies of the priority documents have been received in Application No. _____.

　　　3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

　* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *2 and 3*.

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____ .

DETAILED ACTION

Claim Rejections - 35 USC § 102

1.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2.   Claims 1-15 and 30-41 are rejected under 35 U.S.C. 102(b) as being anticipated

by Engelke et al. (U.S. Patent No. 5,581,593, hereinafter, "Engelke").

Regarding claims 1 and 30, Engelke teaches a communication device (see

figure 1), comprising:

a multifunctional keyboard having a plurality of letter keys, wherein each letter

key is configured to generate a keyboard output signal (see figure 1, query keyboard

22, col.4, In.6-15);

a processor coupled to the multifunctional keyboard that is configured to convert

each keyboard output signal generated by the letter keys into a character code (see

figure 2, microprocessor 32, col.4, In.56-67);

means for converting each keyboard output signal generated by the letter keys

into a telephony tone signal (see figure 2, DTMF MOD 36, col.4, In.56-67); and

a keyboard mode control software module operating on the processor that

controls whether the keyboard output signals from the letter keys are converted into

character codes or telephony tone signals (see col.5, In.10-67, col.6, In.1-67).

Regarding claims 2 and 31, Engelke further teaches the communication device wherein the multifunctional keyboard is a QWERTY style keyboard (see col.4, ln.6-11).

Regarding claims 3 and 32, Engelke further teaches the communication device wherein the converting means is the processor (see figure 2, microprocessor 32, col.4, ln.41-56).

Regarding claims 4 and 33, Engelke further teaches the communication device wherein the converting means is a tone signal generator (see figure 2, DTMF MOD 36, col.4, ln.57-63).

Regarding claim 5, Engelke further teaches the communication device wherein the tone signal generator also generates an audible tone when one of the letter keys is pressed (see col.4, ln.57-63).

Regarding claim 6, Engelke further teaches the communication device wherein the keyboard mode control software module also controls whether the keyboard output signals from the letter keys are converted into both character codes and telephony tone signals (see col.5, ln.10-55).

Regarding claim 7, Engelke further teaches the communication device wherein the telephony tone signal generated for each letter key corresponds to an integer ranging from two (2) to nine (9) (see col.4, ln.6-10).

Regarding claims 8 and 34, Engelke further teaches the communication device wherein the telephony tone signals are Dual Tone Multi Frequency (DTMF) signals (see col.5, ln.30-36).

Regarding claims 9 and 35, Engelke further teaches the communication device wherein the character codes are American Standard Code for Information Interchange (ASCII) character codes (see col.5, In.37-44).

Regarding claim 10, Engelke further teaches the communication device wherein: the plurality of keys on the multifunctional keyboard also includes a plurality of number keys, each of which is configured to generate a keyboard output signals; the processor is also configured to convert the keyboard output signals generated by the number keys into character codes; the converting means also converts the keyboard output signals generated by the number keys into telephony tone signals; and the keyboard mode control software also controls whether the keyboard output signals from the number keys are converted into character codes or telephony tone signals (see figure 2, keyboard 22, microprocessor 32, DTMF MOD 36, col.4, In.6-15, col.4, In.56-67, col.5, In.10-67, col.6, In.1-67).

Regarding claim 11, Engelke further teaches the communication device further comprising: a plurality of software applications stored in a memory of the communication device and executed by the processor, wherein the keyboard mode control software module detects which of the software applications is active in order to determine whether the keyboard output signals from the letter keys are converted into character codes of telephony tone signals (see col.5, In.10-15, col.6, In.1-67).

Regarding claim 12, Engelke further teaches the communication device further comprising: a plurality of software applications stored in a memory of the communication device and executed by the processor; wherein the memory is coupled

to the processor and includes a service store memory location that associates each software application with a keyboard mode, and wherein the keyboard mode is detected by the keyboard mode control software module to determine whether the keyboard output signals from the letter keys are converted into character codes or telephony tone signals (see figure 2, memory 34, col.6, ln.1-67).

Regarding claim 13, Engelke further teaches the communication device further comprising: a software application stored in a memory of the communication device and executed by the processor; wherein the memory is coupled to the processor and includes a configuration store memory location that identifies a preferred keyboard mode for the software application, and wherein the preferred keyboard mode is detected by the keyboard mode control software module to determine whether the keyboard output signals from the letter keys are converted into character codes or telephony tone signals (see col.6, ln.1-67).

Regarding claim 14, Engelke further teaches the communication device of claim 1, wherein the multifunctional keyboard is uniformly distributed across a housing of the communication device such that one half of the letter keys are located on a left-hand side of the housing and the remaining letter keys are located on a right-hand side of the housing (see figure 2, keyboard 22, col.4, ln.5-11).

Regarding claims 15 and 37, Engelke further teaches the communication device wherein the letter keys on the left-hand side of the housing are tilted at a negative angle from vertical and the letter keys on the right-hand side of the housing are tilted at a positive angle from vertical (see figure 2, keyboard 22, col.4, ln.5-11).

Regarding claim 36, Engelke further teaches the communication device wherein the multifunctional keyboard is symmetrically distributed across a housing of the communication device (see figure 2, keyboard 22).

Regarding claim 38, Engelke teaches a multifunctional keyboard for a communication device (see figure 1), comprising:

a plurality of character entry keys (see figure 2, keyboard 22, col.4, ln.6-11), and

means for mapping each of the plurality of character entry keys to one of a number character or a letter character (see figure 2, keyboard 22, col.4, ln.6-11).

Regarding claim 39, Engelke further teaches the multifunctional keyboard wherein the mapping means is a processor (see figure 2, microprocessor 32, col.4, ln.57-60).

Regarding claim 40, Engelke further teaches the multifunctional keyboard wherein the mapping means is a keyboard control software module executing on a processor (see col.5, ln.10-15).

Regarding claim 41, Engelke further teaches the multifunctional keyboard of claim 38, further comprising: means for toggling the multifunctional keyboard between a letter entry mode and a number entry mode, wherein each of the plurality of character entry keys are mapped to an associated number character when the multifunctional keyboard is in the number entry mode and the plurality of character entry keys are mapped to an associated letter character when the multifunctional keyboard is in the letter entry mode (see col.5, ln.30-54).

3.   Claims 16-26 are rejected under 35 U.S.C. 102(b) as being anticipated by Haber

et al. (U.S. Patent No. 5,375,165, hereinafter, "Haber").

Regarding claim 16, Haber teaches a method for controlling an operational

mode of a multifunctional keyboard for a communication device (see figure 2),

comprising the steps of:

providing a telephony mode in which output signals from the multifunctional

keyboard generate telephony tone signals (see col.6, ln.31-64);

providing a data mode in which output signals from the multifunctional keyboard

generate character codes (see col.6, ln.31-64); and

receiving a mode trigger signal that controls whether the communication device

should operate in the telephony mode or the data mode (see col.6, ln.31-64).

Regarding claim 17, Haber further teaches the method wherein the

communication device operates in the data mode by default if the mode trigger signal

does not indicate the telephony mode (see col.6, ln.31-42).

Regarding claim 18, Haber further teaches the method wherein the step of

receiving a mode trigger signal that controls whether the communication device should

operate in the telephony mode or the data mode is performed by a method comprising

the steps of: providing a service store memory location that includes a log of the

operational mode associated with a plurality of applications available on the

communication device; receiving the mode trigger signal, wherein the mode trigger

signal indicates that one of the applications has been executed; and accessing the

service store memory location to detect whether the telephony mode or the data mode
is associated with the active application (see col.2, In.44-59, col.6, In.31-64).

Regarding claim 19, Haber further teaches the method wherein the step of
receiving a mode trigger signal that controls whether the communication device should
operate in the telephony mode or the data mode is performed by a method comprising
the steps of: providing a configuration store memory location that identifies a preferred
operational mode for an application available on the communication device; receiving
the mode trigger signal, wherein the mode trigger signal indicates that one of the
applications has been executed; and accessing the configuration store memory location
to detect whether the preferred operational mode for the application is the telephony
mode of the data mode (see col.2, In.44-59, col.6, In.31-64).

Regarding claim 20, Haber further teaches the method wherein the mode
trigger signal is initiated by pressing a key on the multifunctional keyboard (see col.6,
In.31-42).

Regarding claim 21, Haber further teaches the method wherein the mode
trigger signal is initiated by a switch (see figure 2, key 207, col.7, In.35-49).

Regarding claims 22 and 23, Haber further teaches the method wherein the
mode trigger signal is initiated by activating a software application on the
communication device (see col.6, In.31-64).

Regarding claim 24, Haber further teaches the method wherein the mode
trigger signal is initiated when an incoming message is received by the communication
device (see col.7, In.35-49).

Regarding claim 25, Haber further teaches the method comprising the additional steps of: providing a joint mode in which input from the multifunctional keyboard generates both telephony tone signals and character codes; wherein the mode trigger signal also controls whether the communication device should operate in the joint mode (see col.7, ln.35-49).

Regarding claim 26, Haber further teaches the method wherein the data mode is executed by default if the mode trigger signal does not indicate either the telephony mode or the joint mode (col.6, ln.31-44).

Claim Rejections - 35 USC § 103

4.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5.   Claims 27-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Haber et al. (U.S. Patent No. 5,375,165, hereinafter, "Haber") in view of Peretz et al.

(U.S. Patent No. 6,006,351, hereinafter, "Peretz").

Regarding claim 27, Haber teaches a method for controlling an operational

mode of a multifunctional keyboard for a communication device (see figure 2),

comprising the steps of:

providing a telephony mode in which output signals from the multifunctional

keyboard generate telephony tone signals (see col.6, ln.31-64);

providing a data mode in which output signals from the multifunctional keyboard

generate character codes (see col.6, ln.31-64); and

receiving a mode trigger signal that controls whether the communication device

should operate in the telephony mode or the data mode (see col.6, ln.31-64).

It should be noticed that Haber fails to clearly teach the additional step of

generating an audible tone when a key on the multifunctional keyboard is pressed.

However, Peretz teaches such features (see col.24, ln.1-11) for a purpose of registering

the numerical key to processor.

Therefore, it would have been obvious to one of ordinary skill in the art at the

time the invention was made to incorporate the use of generating an audible tone when

a key on the multifunctional keyboard is pressed, as taught by Peretz, into view of

Haber in order to determine the keyboard is on or off.

Regarding claim 28, Peretz further teaches the method wherein the audible

tone may be enabled or disabled by a communication device user (see col.24, ln.1-11).

Regarding claim 29, Peretz further teaches the method wherein the audible

tone generated while the communication device is executing the telephony mode is

different from the audible tone generated while the communication device is executing

the data mode (see col.24, ln.1-11).

Conclusion

6.   The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure. In order to expedite the prosecution of this application, the

applicants are also requested to consider the following references. Although

Balakrishnan et al. (U.S. Patent No. 5,952,942), Makela et al. (U.S. Patent No.

6,047,196), Russo (U.S. Patent No. 5,336,002), and Kessler (U.S. Patent No.

4,503,228) are not applied into this Office Action; they are also called to Applicants

attention. They may be used in future Office Action(s). These references are also

concerned for supporting the system and method for input of text messages from the

keypad and communication device with two modes of operation.

7.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to **Tuan A. Pham** whose telephone number is

(703) 305-4987. The examiner can normally be reached on Monday through Friday,

8:00 AM-5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Mr. Curtis Kuntz can be reached on (703) 305-4708 and

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Art Unit 2643

May 14, 2004

Examiner

Tuan Pham

CURTIS KUNTZ
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600